REMARKS

In this paper, no amendments are made. Claims 1-20, as originally filed, are pending. Reconsideration of this application is requested.

Rejection Under 35 U.S.C. 103(a)

Claims 1-20 were rejected under 35 U.S.C. 103(a) as unpatentable over PCT publication WO 00/74818 ("PCT '818") in view of French patent FR 2034160 ("FR '160") and further in view of U.S. Patent No. 6,190,432 to Gieseke et al. ("Gieseke et al. '432"). Applicants disagree.

In the first office action of April 26, 2005, the PCT '818 reference in combination with Gieseke et al. '432 was applied. As both of the cited references (PCT '818 and Gieseke et al. '432) are assigned to the assignee of the pending application, Applicants' representatives were and are familiar with the teachings of these references. In the response filed on 21 June 2006, Applicants pointed out the numerous differences between these two references and the pending claims. The outstanding Office Action now applies FR '160, in combination with PCT '818 and Gieseke et al. '432, as a way to address the numerous differences. It is respectfully submitted that this newly applied combination of FR '160, PCT '818, and Gieseke et al '432 would not have suggested the claimed inventions for at least the following reasons.

1. PCT '818 does not disclose or suggest a projection extending outwardly from a filter sheath.

As Applicants explained in the last response, it is agreed that the PCT '818 reference discloses a method of installing a filter cartridge 500 with sealing arrangement 543 and sealing gasket 544 for an air cleaner housing. Sealing of filter cartridge 500, and other cartridges of the PCT '818 reference, is accomplished with a retention mechanism, such as the retention mechanism 602 of Figure 39. Filter cartridge 800 in PCT '818, similar in various ways to filter cartridge 500, is also configured for mounting with a retention mechanism, such as the retention mechanism 602 of Figure 39.

The Office Action has repeated the statement that projection 814 in PCT '818 is a part of the filter cartridge 800 and that it extends outward from the filter sheath. This is incorrect. Projection 814 is not a feature on filter cartridge 800, and thus does not meet the recitation of "a projection arrangement including projections extending outwardly from opposite sides of the

sheath" of the pending claims. As explained in the last response, projection 814 in PCT '818 is a first interlocking member 813, which is part of second interlocking device 812. Projection 814 extends from a control arm of a retention mechanism (such as mechanism 602), or from a door. The first interlocking device 804 (which is part of filter cartridge 800) and second interlocking device 812 (which includes projection 814) are constructed and arranged to interact with each other.

Furthermore, projection 814 in PCT '818, does not meet the recitation of "a portion of the air cleaner arrangement in engagement with the projections on the sheath and thereby axially driving the filter cartridge against the housing" (claim 1, lines 21-24; claim 8, lines 23-26).

2. It would not have been obvious to substitute z-media from Gieseke et al. '432 for the pleated media used in PCT '818.

The filter cartridges disclosed in the PCT '818 document are each embodied as pleated media, configured in the form of V-packs. In FIG. 36, for example, a cartridge is shown at 500. The two "arms" forming the "V" are shown at panels 502 and 504. Each arm 502, 504 is its own panel of pleated media. Unfiltered air flows through one of the panels 502, 504, through the pleated media, from the outside to the inside. Upon reaching the inside plenum 520 of the "V", the filtered air is directed to downstream components. The seal member 544 (FIGS. 37, 38) is around the clean air plenum 520, to prevent unfiltered air from reaching the clean air plenum 520. The fundamental operating principles of the air cleaner in the PCT '818 document do not allow for "obvious" substitution of the particular type of filter media recited in the claims. (It should be noted that FR '160, which will be discussed more fully below, discloses a panel filter in a rigid frame or frames connected together by welding or riveting.)

The Office Action relies on Gieseke et al. '432 for the teachings of z-filter media and a sheath around the z-filter. Applicants agree that Gieseke et al. '432 discloses z-filter media with a sheath to prevent unwinding of the media. Nevertheless, there is no suggestion from any of these references that the z-filter media disclosed by Gieseke et al. '432 should be used with the frame of FR '160 and then installed into the air cleaner arrangement described in the PCT '818 publication for at least the following reasons.

The media recited in the claim is the type of media that has a fluted sheet secured to a facing sheet with opposite inlet and outlet flow faces, described as "z-media." Filter elements

that use z-media face a unique set of problems. Some of these problems include: how to accommodate the large amount of surface area of the bundled media in a given quantity of space; how to get the element properly installed, engaged, and secured within a housing given this particular type of media's propensities; how to manage the air flow through the z-media to ensure that surface area in the media is not undesirably blocked from the straight-through flow through each of the flutes; and how to access and handle z-media elements for periodic servicing. Z-filter elements often have a length to them (although no particular length is required in the claims) that must be accounted for in the air cleaner designs. Further, the air cleaner housings have to be designed so that the air flow is not obstructed along the upstream flow face or the downstream flow face. Each of the flow faces has several flow passageways, due to the structure and operation of the fluted media. While handling the z-filter element, the user must be careful so that the inlet passages in the fluted media and the outlet passages in the fluted media do not become accidentally obstructed through the handling process. All of these factors contribute to a unique set of problems presented to the air cleaner designer.

The only references cited in the Office Action that shows z-media is Gieseke et al. '432. This reference does not disclose or hint even in the remotest way that the type of method claimed in claims 1 or 8 could be done. Each of the other references cited (PCT '818 and FR '160) discloses panel filter elements, with the PCT '818 disclosing the panel filter elements in the form of V-packs. Panel filter elements are not equivalent to Z-filter elements. Panel filter elements do not help with solving the unique set of problems presented due to the propensities of z-filter media. Panel filter elements are usually short, simple systems. Panel filter elements do not help in solving the problems of how to account for the large surface area presented by z-filter media, how to get the z-filter element properly engaged and secured within a housing given the z-media's propensities, how to get the z-element sealed within the housing, and how to allow for handling of the element during servicing such that the user does not inadvertently block the several flow passageways in the flow faces presented by the fluted media. The Examiner's position that it would have been obvious to a person of skill in the art to merely substitute an element of Z-media for one of these old types of panel media packs is not supported. It appears that impermissible hindsight reconstruction has been used in formulating the rejection.

While Gieseke et al. '432 discloses z-filter media, there is no instruction on how one of ordinary skill should use z-filter media in the arrangement of PCT '818. There is no suggestion:

(i) for how the z-media should be oriented for filtering the air; (ii) for how the filter should be sealed; (iii) for how much media should be used. Pleated media and z-media are not readily interchangeable.

3. FR '160 does not disclose a seal arrangement carried by the filter cartridge or a filter cartridge with Z-filter media and, when combined with PCT '818 and Gieseke et al. '432, does not render the claims unpatentable.

The Office Action turns to newly applied FR '160 for disclosure of a sheath surrounding filter media, a projection arrangement including projections extending outwardly from opposite sides of the sheath, and a filter cartridge positioned inside of a housing with a portion of the air cleaner in engagement with projections on the sheath, thereby axially driving the filter cartridge and axially sealing the seal against the housing.

While Applicants agree that FR '160 does show a filter cartridge axially sealed, Applicants disagree with various other characterizations of this French reference. FR '160 shows a panel filter ("drawer B") in a "single rigid frame 12 or preferably several frames 12 arranged end to end and rigidly connected together by welding or riveting" and are formed by "angle irons" (translation, page 3, lines 27-29). Grating or expanded sheet metal 14 extends over the opening to support the layer of filter material 15. Stubs 17, 18 extend from the frame 12. There is a slide frame A having gasket material 4, 5, 6; defining lateral slides 8; and defining holes 11. The slide frame A accepts the drawer B, in which the stubs 17 slide along the slides 8, until the drawer B is shifted into a sealed position against gaskets 4, 5, 6, and stubs 18 engage holes 11.

Certain distinctions between the FR '160 reference and some of the claim limitations should be noted here: (i) the gasket material 4, 5, 6 is on the slide frame A, and is not carried on the drawer B; (ii) the filter media in the drawer B, although not described, is obviously some type of axially flow-through media ("layer of filtering material," translation, p. 3, lines 31-32); and (iii) the media is carried by an angle iron frame. There is no disclosure or suggestion in FR '160 of using a z-media construction, as claimed. Nor is there disclosure or suggestion in FR '160 of the filter cartridge having a seal arrangement -- in FR '160, the seal gaskets are on the slide frame A, and if they were moved from the slide frame A to the drawer B, it would defeat the purpose of the design of FR '160, which is explained to be to allow for easy mounting of the drawer B by sliding easily and avoiding leaks (translation, p. 1, paragraphs 3-4).

At least for these reasons, Applicants contend that the PCT '818 reference, FR 2034160, U.S. Patent No. 6,190,432, and any combination thereof, do not render the pending claims obvious and unpatentable. The Section 103 rejection is based on a misunderstanding of the PCT '818 reference. Further, as explained, it would not have been obvious to substitute z-media for the panel filter media of the PCT '818 reference and the FR ' 160 reference.

Summary

In view of the above remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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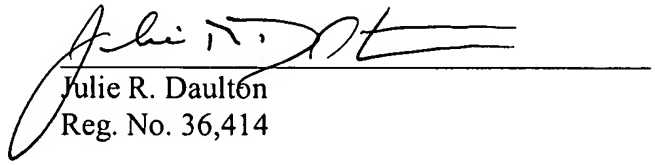

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